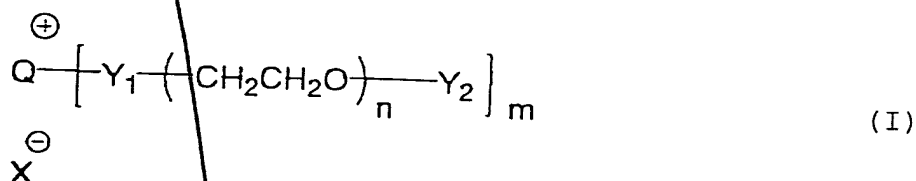


WHAT IS CLAIMED IS:

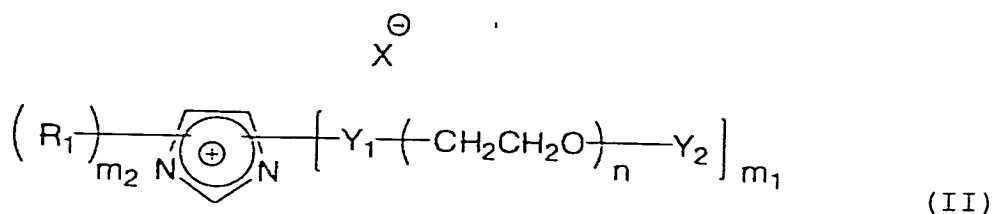
- SUB  
a1
1. A polymerizable molten salt monomer represented by the following general formula (I):



09765360-012204

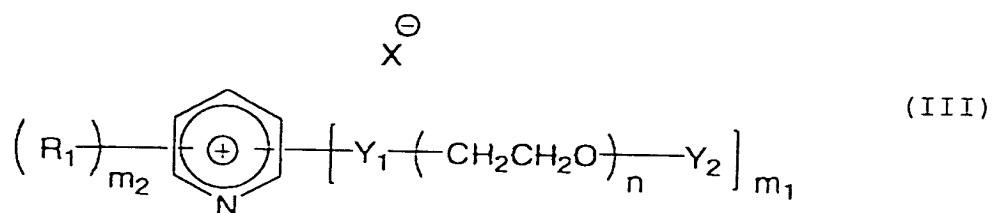
wherein Q represents a nitrogen-containing aromatic heterocyclic atomic group which can form a cation; Y<sub>1</sub> represents a divalent interlocking group or a bonding hand; Y<sub>2</sub> represents a substituted or unsubstituted alkyl group; n represents an integer of from 2 to 20; m represents an integer of 2 or more; X<sup>-</sup> represents an anion; plural Y<sub>1</sub>'s and plural Y<sub>2</sub>'s may be the same or different, respectively, with the proviso that at least one of Y<sub>2</sub>'s has a polymerizable substituent group; and a plurality of the compounds of the general formula (I) may be connected to each other at Q or Y<sub>2</sub> to form a dimer, trimer or tetramer.

2. The polymerizable molten salt monomer according to Claim 1, wherein the general formula (I) is represented by the following general formula (II):



wherein  $Y_1$  represents a divalent interlocking group or a bonding hand;  $Y_2$  represents a substituted or unsubstituted alkyl group;  $R_1$  represents a substituent;  $n$  represents an integer of from 2 to 20;  $m_1$  represents an integer of from 2 to 5;  $m_2$  represents an integer of from 0 to  $(5 - m_1)$ ;  $X^-$  represents an anion; plural  $Y_1$ 's and plural  $Y_2$ 's may be the same or different, respectively, with the proviso that at least one of  $Y_2$ 's has a polymerizable substituent group; and a plurality of the compounds of the general formula (II) may be connected to each other at  $R_1$  or  $Y_2$  to form a dimer, trimer or tetramer.

3. The polymerizable molten salt monomer according to Claim 1, wherein the general formula (I) is represented by the following general formula (III):

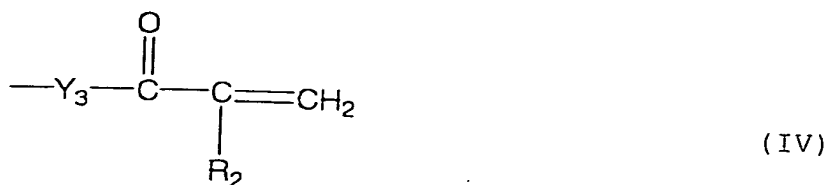


wherein  $Y_1$  represents a divalent interlocking group or a bonding hand;  $Y_2$  represents a substituted or unsubstituted alkyl group;  $R_1$  represents a substituent;  $n$  represents an integer of from 2 to 20;  $m_1$  represents an integer of from 2 to 6;  $m_2$  represents an integer of from 0 to  $(6 - m_1)$ ;  $X^-$  represents an anion; plural  $Y_1$ 's and plural  $Y_2$ 's may be the same or different, respectively, with the proviso that at least one of  $Y_2$ 's has a polymerizable substituent group; and a plurality of the compounds of the general formula (III) may be connected to each other at  $R_1$  or  $Y_2$  to form a dimer, trimer or tetramer.

4. The polymerizable molten salt monomer according to Claim 1, wherein said polymerizable group is an ethylenically unsaturated group.

5. The polymerizable molten salt monomer according to Claim 1, wherein said polymerizable group contains a group selected from the group consisting of an acryloyl group, a methacryloyl group and a styryl group.

6. The polymerizable molten salt monomer according to Claim 1, wherein said polymerizable group is represented by the following general formula (IV):



wherein  $R_2$  represents a hydrogen atom or an alkyl group;  $-Y_3-$  represents  $-O-$ ,  $-N(R_3)-$  or a single bond; and  $R_3$  represents a hydrogen atom or an alkyl group.

7. The polymerizable molten salt monomer according to Claim 1, wherein  $X^-$  in the general formulae (I) to (III) is a halogen anion, an amide anion or a fluoride anion containing at least one element selected from the group consisting of boron (B), phosphorus (P) and sulfur (S).

8. The polymerizable molten salt monomer according to Claim 1, wherein  $X^-$  in the general formulae (I), (II) and (III) is an iodine anion.

9. An electrolyte composition containing a polymer compound obtained by polymerizing a polymerizable molten salt monomer according to Claim 1.

10. The electrolyte composition according to Claim 9, further comprising iodine.

11. The electrolyte composition according to Claim 9, further comprising a lithium salt.

12. An electrochemical cell containing an electrolyte composition according to Claim 9.

13. A photoelectrochemical cell comprising:  
a charge-transferring layer containing an electrolyte composition according to Claim 9;

a photosensitive layer containing a semiconductor sensitized with a dye; and

a counter electrode.

14. A nonaqueous secondary cell containing an electrolyte composition according to Claim 9.

09765368.012201